

## WHAT IS CLAIMED IS:

1. A system for delivery of an implantable device, the system comprising:  
an inner tube on which the implantable device is mounted;  
an outer tube enclosing said inner tube and said implantable device; and  
an intermediate tube mounted between said inner tube and said outer tube, said intermediate tube comprised of a material to ease sliding of said outer tube.
2. The system of claim 1, wherein said implantable device is selected from the group consisting of a diverter, a stent and a graft.
3. The system of claim 1, further comprising a deployment sleeve located on said inner tube for holding said implantable device in place prior to sliding of said outer tube.
4. The system of claim 3, wherein said deployment sleeve comprises indentations.
5. The system of claim 4, wherein said indentations are parallel ridges.
6. The system of claim 3, wherein said deployment sleeve comprises elastomeric material.
7. The system of claim 1, wherein said implantable device is self-expandable.
8. The system of claim 7, wherein said self-expandable implantable device is braided.
9. The system of claim 7, wherein said self-expandable implantable device has a shape memory.
10. The system of claim 7, wherein said self-expandable implantable device is released for expansion by pulling said outer tube proximally with respect to said intermediate tube.
11. The system of claim 1, wherein said intermediate tube is securably connected to said inner tube.
12. The system of claim 1, wherein said intermediate tube further comprises radiopaque markers.

13. The system of claim 1, wherein said intermediate tube is outwardly flared at its distal end.

14. The system of claim 13, further comprising a stopper at said outwardly flared distal end of said intermediate tube, said stopper being secured to said inner tube.

15. The system of claim 14, wherein said stopper is radiopaque.

16. The system of claim 1, further comprising an ellipsoidal tip.

17. The system of claim 16, wherein said tip further comprises an elongated portion and is mechanically attachable to said inner tube.

18. The system of claim 17, wherein said mechanical attachment comprises:

a band located on said elongated portion, wherein said band has an outer diameter which is less than a diameter of the widest portion of said ellipsoidal tip; and

a flared portion on said distal end of said hollow inner tube, wherein said ellipsoidal tip is situated over said flared portion.

19. The system of claim 18, wherein said band is radiopaque.

20. The system of claim 18, wherein said flared portion and said hollow inner tube are fabricated from one piece.

21. The system of claim 1, wherein said outer tube is at least partially transparent.

22. The system of claim 21, wherein said outer tube is transparent along its length from its proximal end until a proximal end of said diverter.

23. The system of claim 1, wherein said inner tube is hollow.

24. The system of claim 23, wherein said inner tube has an inner diameter of 0.1 to 1 mm.

25. A deployment sleeve for a self-expandable device, wherein said deployment sleeve is generally cylindrical and hollow so as to be positioned on a tube, and having ridges, wherein each ridge is formed along a longitudinal axis of said sleeve.

26. The sleeve of claim 25, wherein said ridges are parallel to one another.

27. The sleeve of claim 25, wherein said deployment sleeve comprises elastomeric material.

28. The sleeve of claim 25, wherein said tube is a hollow inner tube, said tube and said deployment sleeve being positionable within a body lumen.

29. The sleeve of claim 25, wherein said body lumen is a blood vessel.

30. The sleeve of claim 28, wherein said hollow inner tube has an inner diameter of 0.1 –1 mm.

31. The sleeve of claim 28, wherein said inner tube further comprises an ellipsoidal tip at its distal end.

32. The sleeve of claim 31, wherein said tip is mechanically attached to said inner tube.

33. The sleeve of claim 25, further comprising a self-expandable implantable device positioned on said deployment sleeve wherein a portion of said implantable device lies within said ridges.

34. The sleeve of claim 33, further comprising an outer tube surrounding said implantable device, wherein displacement of said outer tube with respect to said implantable device allows said implantable device to be expanded.

35. The sleeve of claim 25, wherein said sleeve is positioned near a distal end of an implantable device delivery system.

36. The sleeve of claim 33, wherein said sleeve is shorter in length than said implantable device and wherein only a portion of said implantable device is positioned on said sleeve.

37. A device for introducing into a body lumen, said device comprising:  
an inner tube having a proximal end and a distal end;  
an outer tube enclosing said inner tube;  
an intermediate tube mounted between said inner tube and said outer tube, said intermediate tube having a proximal end and a distal end, wherein said distal end of said intermediate tube is located proximal to said distal end of said inner tube; and  
a stopper attached to said inner tube at said distal end of said intermediate tube.

38. The device of claim 37, wherein said distal end of said intermediate tube is flared outwardly over said stopper.

39. The device of claim 37, wherein said body lumen is a blood vessel.

40. The device of claim 37, wherein said inner tube is a hollow tube and wherein an inner diameter of said hollow tube is 0.1-1 mm.

41. The device of claim 37, wherein said intermediate tube comprises PTFE.

42. The device of claim 37, wherein said stopper is radiopaque.

43. The device of claim 37, further comprising a self-expandable implantable device positioned between said inner and outer tubes in a location distal to said stopper.

44. The device of claim 43, wherein said implantable device is positioned on a sleeve attached to said inner tube.

45. The device of claim 44, wherein said sleeve comprises elastomeric material.

46. The device of claim 44, wherein said sleeve is shorter in length than said implantable device.

47. The device of claim 43, wherein said self-expandable implantable device is braided.

48. The device of claim 37, wherein said inner tube further comprises an ellipsoidal tip.

49. The device of claim 48, wherein said ellipsoidal tip is attached to said inner tube mechanically.

50. A device for introducing into a body lumen, said device comprising:  
an elongated member having a proximal end and a distal end; and  
a tip having an ellipsoidal shape, wherein said tip is located at said distal end.

51. The device of claim 50, wherein said tip has an elongated portion proximal to said ellipsoidal shape, and wherein said tip is attached to said distal end of said elongated member mechanically.

52. The device of claim 51, wherein said mechanical attachment comprises:

a band located on said elongated portion of said tip, wherein said band has an outer diameter which is less than a diameter of the widest portion of said ellipsoidal shape; and

a flared portion on said distal end of said elongated member, wherein said ellipsoidal shape is situated over said flared portion.

53. The device of claim 52, wherein said band is radiopaque.

54. The device of claim 50, wherein said body lumen is a blood vessel.

55. The device of claim 50, wherein said elongated member is part of an implantable device delivery system.

56. The device of claim 55, wherein said elongated member is a hollow tube, and wherein an inner diameter of said hollow tube is 0.1-1 mm.

57. The device of claim 55, wherein said elongated member further comprises a self-expandable implantable device.

58. A method for positioning an implantable device within a body lumen, the method comprising:

providing a delivery system having an inner tube, an intermediate tube at least partially covering said inner tube, an outer tube enclosing said inner tube and said intermediate tube, and an implantable device between said inner and outer tubes;

inserting said delivery system into the body lumen; and

pulling said outer tube proximally with respect to said inner tube so as to release the implantable device.

59. The method of claim 58, wherein said implantable device is a diverter, stent or graft.

60. The method of claim 58, wherein said body lumen is a blood vessel.

61. The method of claim 58, wherein said pulling said outer tube is eased by the relatively low friction of said intermediate tube.

62. The method of claim 61, further comprising a stopper at a distal end of said intermediate tube, wherein the distal end of the intermediate tube at least partially encloses said stopper.

63. The method of claim 59, further comprising allowing the implantable device to self-expand.

64. The method of claim 63, wherein said implantable device comprises braided components, and wherein said self-expansion occurs due to extension of said braided components upon removal of said outer tube.

65. A method for preventing entanglement of an implantable device within a delivery system, the method comprising:

providing a delivery system having an inner tube having a diverter positioned on the inner tube and a stopper positioned on the inner tube proximal to said implantable device, having an outer tube positioned over the inner tube, and further

having an intermediate tube attached to the inner tube, wherein a distal end of the intermediate tube at least partially covers the stopper; and

sliding the intermediate tube distally with respect to said outer tube so that the distal end of the second tube flares outward over the stopper, thereby coming in contact with the outer tube and forming a divider between the implantable device and a proximal portion of the delivery system.

66. The method of claim 65, further comprising visualizing said system within a body by providing a radiopaque material for said stopper.

67. The method of claim 65, further comprising easing said sliding by providing a low friction material for said intermediate tube.

67. The method of claim 64, wherein said sliding is done from a proximal end of said delivery system.

68. A method for positioning an implantable device within a delivery system, the method comprising:

providing a sleeve with indentations on a distal end of an inner tube;

placing the implantable device at least partially on the sleeve wherein part of the implantable device sits within the indentations; and

providing an outer tube to enclose the implantable device and the inner tube.

69. The method of claim 68, wherein said implantable device is a diverter, stent or graft.

70. The method of claim 68, wherein said indentations are ridges in a longitudinal direction.

71. The method of claim 68, wherein said implantable device is longer than said sleeve.